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ABSTRACT

A determination was made of how graduates of Texas professional education programs perform on licensure examinations in comparison with their counterparts in other states. Test scores of Texas graduates were compared with national norms and averages in other states, when available, as well as with scores of graduates of out-of-state programs who take the Texas examinations. Most of the statistical information was provided by the state regulatory agencies administering the examinations, although in some cases national agencies and special studies supplied the data. Thirteen professional areas are covered: architecture, certified public accountancy, dentistry, dental hygiene, engineering, law, medicine, nursing, optometry, pharmacy, physical therapy, psychology, and veterinary medicine. In each case the study results are summarized and some data provided in tables. (MSE)

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ED169867

A Survey of

# Professional Licensure Examinations in Texas

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MARCH 1979

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# FOREWORD

The performance of graduates of Texas colleges and universities on professional licensure examinations is a matter of continuing interest to the public and of much significance to the professional schools and programs that produce the candidates for licensure. This review of examination results took several months and covered 13 licensure areas.

Most of the statistical information in this report was provided by the state regulatory agencies administering the examinations. In some cases national agencies supplied the data. Reports of the Sunset Commission and special studies, such as those on the CPA examination, also were used. All universities with professional programs were asked to provide data and other types of information.

Staff members of the agencies not only provided the data requested but also assisted in interpreting the statistics. They helped in acquiring data from the national agencies or, in some cases, acquired it for us. They also read parts of the working draft and provided suggestions for improvement.

The Coordinating Board staff is pleased to acknowledge the contributions of those agency and institutional representatives and to thank them for their assistance.

Kenneth H. Ashworth
Commissioner of Higher Education

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FACTS CONCERNING
PROFESSIONAL LICENSURE EXAMINATIONS

| Professional Category | When is exam given? | Must the entire exam be taken at one sitting? | If one fails, how long a wait to re-take? | How many times can the exam be taken? |
|---|---|---|---|---|
| Architecture | June-Qualifying<br>December-Professional | Yes | Next exam date | No limit |
| Certified Public Accountancy | May<br>November | No | 1 year if grade was under 50.<br>For 50-74, next exam | No limit |
| Dentistry, Dental Hygiene | Varies, at least 3 times per year + makeup | Yes | Normally, when fall makeup is given | Three |
| Engineering | April<br>November | No | Next exam date | For students-no limit<br>For others-3 years |
| Law | February<br>July | Yes | Next exam date.<br>After 3 failures, 1-year wait | Five |
| Medicine | June<br>December | Yes | Next exam date and within 2 years | Three, after that 1-year course required |
| Nursing | July<br>February | Yes | Next exam date | Three, after that remedial course required |
| Optometry | January<br>June | Yes | Next exam date | Three, after that all the tests must be retaken |
| Pharmacy | January<br>June<br>September | No | Next exam date | No limit |
| Physical Therapy | April<br>October | Yes | 6 to 12 months on the failed part only | Three, special permission for others |
| Psychology | April<br>October | Yes | Next exam date; 1-year wait on 2nd failure | No limit |
| Veterinary Medicine | June<br>December | Yes | Next exam date | No limit |

NOTE: For additional information on the rules and regulations of the regulatory agencies dealing with the certification and licensure process, consult with the appropriate staff of each agency.

## OVERVIEW

The purpose of the Texas licensure process is to protect the health, safety or well-being of the citizens of the state by assuring that certain standards of quality are met by individuals seeking to enter a profession. Some 34 state agencies have authority to examine and license candidates.*

This study was initiated to determine how graduates of Texas professional education programs perform on licensure examinations in comparison with their counterparts in other states. Test scores of Texas graduates were compared with national norms and averages in other states, when available, as well as with scores of graduates of out-of-state programs who take the Texas examination.

In most of the professions reviewed a critical point exists in the continuum of the educational/licensure process where qualifications of the individual are subjected to a severe test. It frequently occurs in competition for admission into the professional program.

At this point those of lesser abilities and qualifications are weeded out, assuring that students admitted to the program are the best qualified. As a result, they have little difficulty in passing the licensure examination. This process occurs primarily in the fields of medicine, dentistry, optometry and veterinary medicine; in selected baccalaureate programs in nursing, pharmacy and dental hygiene; and in most of the law programs.

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*This report is limited to a select number of professions which are regulated by one of those agencies. About 20 professional licensure areas originally were selected for review, but data on examination results were insufficient or unavailable in several fields. Certification and licensure tests given only at the national level were not included.

In contrast, comparatively low admissions standards to programs practically guarantee that many candidates will have trouble with the licensure examination. This situation occurs in certain programs in nursing and for the master's level psychological associate. To some degree the problem also was observed in accounting courses leading to the CPA examination and a few law and pharmacy programs.

The licensure examination in some professions is viewed as a learning experience. Candidates may take one or more parts of the test at a time, with licensure awarded after they attain passing scores on each section. This practice was most noticeable in the field of certified public accountancy.

In certain professions the examination is not taken immediately upon completion of the educational program for reasons inherent in the licensing process for that field. Architecture provides the most obvious illustration of this point because of the three-year internship required before the examination can be taken. Many candidates for certified public accountancy also do not take the licensing test immediately.

## Procedure

Statistical data on the licensure examination for the past several years were requested from several licensing agencies. There was no standard of uniformity across the agencies because of differences in types of examinations administered and records maintained. In some instances data were difficult to obtain because of concerns over the confidentiality of examination scores.

Institutions offering professional programs submitted statistical data when available. Several reported that the information was not provided to them by the examining board or that it was impractical to keep records because

of the low numbers of graduates.

National norms on the licensure examination could not be established in each profession. In several of the professions state licensure boards are authorized to establish the minimum passing score, resulting in substantial variation from one test to the next within one state. For some professions national licensure examinations count for only part of the candidate's score. In some, a clinical, laboratory or other examination is prepared and scored at the state level.

## Architecture

Licensure of Texas architects generally involves completion of a five-year degree program and three-year internship under a licensed architect to fulfill the required eight-year training period. Other combinations of education and acceptable experience also may qualify the candidate for the licensure test.

Pass/fail data on the architecture licensure examination since 1973 indicate that about two-thirds of the candidates pass on their first effort. The passing rate for graduates of state-supported programs was 63 percent for those with a baccalaureate degree and 58 percent for those with a master's degree. Rice University graduates fared better, with 95 percent at the baccalaureate level and 79 percent at the master's level passing.

From 1973 through 1977, 65 percent of the baccalaureate graduates from out-of-state schools who took the Texas test passed. During the same period, about 70 percent of the master's degree candidates from out-of-state schools passed.

Several educators have cautioned against evaluating educational programs on the basis of the test scores. The examination generally is not taken until at least three years after the candidate finishes the degree program. More importantly the examination emphasizes practice over the specifics of course content.

As in several other professions studied, the institutions do not receive examination performance data routinely from the licensing board. They therefore have not developed procedures for program evaluation based upon test results.

For a more detailed discussion on the licensure examination and statistical information, see page 15.

## Certified Public Accountancy

The licensing examination for certified public accountancy in Texas is available on a broad basis of eligibility to those who have at least 60 semester credit hours from a recognized college in any subject. Candidates who take the test are a mix of senior and junior college graduates and candidates not having a degree.

Results of the Texas CPA test are not based upon pass/fail rates on the entire examination, as is true in several other licensure tests. Under the pass/fail classification, students could be classified as failing even though all parts taken were passed.

Data on CPA licensure results were not available from the Texas State Board of Accountancy prior to the test of November 1976. The board has authorized detailed analyses of the candidates' characteristics for all of the examinations since that date.

All pass/fail data in those reports are by school and by test taken. There are four tests, and if the candidate took three of them, he or she is listed as a pass or fail on each one.

The number of candidates passing each of the four parts of the CPA test is low when compared to some licensure areas where the greatest challenge is at the program admission level. Accounting courses are taken by students for many purposes other than preparation for the CPA examination.

A summary of CPA examination performance from 1973 through 1977 showed a licensure rate of 15 percent for the May exam each year and 17 percent for the November exam. A comparison of CPA scores at the national level has shown that on each of the four test areas, Texas candidates do about as well as the national averages. For example, on auditing the Texas candidates averaged 25 percent passing compared to 27 percent nationally; 37 percent on business law compared to 34 percent nationally; 31 percent on accounting theory compared to 32 percent nationally; and 29 percent on accounting practice compared to 32 percent nationally.

Educators in accounting believe that when the CPA exam results are put into proper perspective the candidates' records will be less subject to criticism. Students who are still taking courses in a degree program can take part of the examination but are not eligible to take the accounting practice test. Programs in accounting encourage those students having the required accounting courses to take the examination as early as possible because of the learning experience involved. The candidate is penalized if he does not take all subjects for which he is eligible unless he submits an excuse acceptable to the Board. However, this practice of students taking the examination before they are eligible to take the entire four parts leads to distorted findings on a pass/fail basis.

The recent decision of the Board of Accountancy to have the analysis conducted on candidates and to report the findings to the institutions having accounting programs will be of great assistance to those programs. Up to now they have had little feedback on how well or poorly their graduates performed. Heads of accounting programs must, under current practice, receive the candidate's authorization before he or she can receive the test results.

The reports based on the November 1976 and May 1977 examinations have been used by one institution (Texas A&M) to place increased emphasis on problem solving in accounting courses, to institute a CPA law review course and a CPA review course for auditing, theory and practice.

The Texas State Board of Public Accountancy believes that an increase in the number of semester credit hours in accounting and cognate courses required to qualify for the CPA examination would insure a higher ratio of passing to failure for candidates who had successfully completed a degree program having those additional hours. Further discussion begins on page 21.

## Dentistry

From 1973 through 1978, some 93 percent of the candidates from Texas dental schools passed the state licensure examination administered by the Texas State Board of Dental Examiners. Nearly 94 percent of University of Texas dental school graduates taking the test passed. Baylor University graduates had a 93 percent passing rate. About 93 percent of all the graduates of a dental school in Texas who took the licensure exam during that six-year period, passed it. On a year to year basis, the passing rate was 98 percent in 1973 and 1974, 93 percent in 1975 and 1976, 88 percent in 1977, and 90 percent in 1978.

Comparative data from dental schools throughout the United States were acquired from the Board of Dental Examiners. For comparison among states, eight schools were selected from various parts of the country whose size and support status were similar to Texas. During the period 1973 through 1977, state boards in Kentucky, Maryland, North Carolina, Ohio, Tennessee, Virginia, Washington and California reported figures showing a 90 percent passing rate among graduates of their dental schools on their respective state exams.

A significantly higher passing rate is evident on dental licensure examinations than in such areas as architecture and certified public accountancy. Contributing to this higher passing rate is the fact that the dental graduate usually takes the test soon after completing the degree program. Also, admission to dental school is highly selective. In addition to the national examination, the licensure candidate also must pass a clinical examination.

Comparatively high passing rates indicate that the institutions' internal evaluation procedures are effective.

Additional information on the licensure examination in dentistry, including tables, begins on page 29.

## Dental Hygiene

In the four-year period surveyed the passing rate was 83 percent among candidates with associate degrees in dental hygiene from the seven junior college programs. Candidates from the three dental schools did better, with 96 percent passing. By comparison, 83 percent of the candidates from the three university-based programs passed. The overall rate of passing was 87 percent. During the same period, the rate of passing for graduates from other states taking the Texas exam was 74 percent.

For a discussion of the dental hygiene licensure process and a breakdown of licensure performance by institution, see page 35.

## Engineering

Engineering graduates in Texas may gain licensure without examination but their licenses would be valid only in Texas. The University of Texas at Austin, for example, reported that students are encouraged to take the engineer-in-training examination prior to graduation so that reciprocity can be acquired if needed.

Graduates of public accredited engineering schools had a 79 percent rate of passing the licensure examination from 1973 through 1978. During the same period, 96 percent of the candidates from Rice and Southern Methodist Universities passed. The passing rate was 80 percent for all programs, public and private.

Test scores of Texas candidates on the national licensure examination appear to be near the national average. At the national level in 1976 and 1977 passing rates on the three parts of the examination were 77 percent on two and 78 percent on the third. The national average is estimated at about 70 percent.

Additional information on the engineering licensure process, including performance record by institution, is shown starting on page 39.

## Law

From 1974 through 1977 the licensure examination for Texas lawyers was passed by 87 percent of the candidates from the four state-supported law schools. The passing rate was 96 percent for those from the Texas Tech University

law school, 30 percent* for Texas Southern University, 95 percent for the University of Houston and 97 percent for the University of Texas at Austin. Candidates from the four law schools in independent institutions had a passing rate of 94 percent.

Texas law graduates tend to perform well on the state bar examination, with the exception of the candidates from Texas Southern University, for whom the performance is better than shown by the raw data.* The comparison of the results of the Texas bar in 1978 with five other states two years earlier shows that the Texas graduates had a better passing rate than four of the other five states.

For a detailed presentation on the bar examination and the results for 1974-1977, see page 45.

## Medicine

The passing rate of Texas medical school graduates has remained consistently high for several years. The four medical schools of the University of Texas System had an overall passing rate among their graduates of 97 percent. The overall statewide rate among public institutions--including Texas Tech University School of Medicine and Texas College of Osteopathic Medicine--was 96 percent. Baylor College of Medicine candidates passed at a rate of 93 percent.

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* The institution reports that although some graduates retake the examination three or four times, ultimately 70 percent of the Texas Southern University law school graduates pass the bar. The institution states that the low percentage of students passing is due to the repeat examinations, which have a compounding effect when 30 percent of the graduates do not pass the bar exam after many attempts. This position is supported by the fact that the total number of candidates reported over several years far exceeds the total number of TSU graduates for that period.

For all Texas programs the rate was 95 percent.

Out-of-state and foreign medical school graduates perform somewhat below the averages of the Texas candidates. During the five-year period covered by this study 89 percent of the graduates from out-of-state schools who took the Texas licensing exam passed. The foreign medical school graduates did poorly by comparison, with a 63 percent passing rate.

Additional information on the medical licensure examination, including tables, begins on page 51.

## Nursing

From 1973 through early 1978, the Board of Nurse Examiners reported an 83 percent rate of passage among baccalaureate graduates taking the licensure test. That rate is the same as the passing average of candidates from only state-supported baccalaureate programs. Candidates from the independent institutions performed slightly better, with an 85 percent passing rate.

Three types of educational programs produce candidates for licensure, and the differences in educational and clinical requirements have an apparent impact upon examination results.

A comparison of the national and state means on the registered nurse licensure examination shown elsewhere in this report indicates that Texas candidates regularly score below the national average on the several parts of the licensure examination.

The passing rates among graduates of associate degree programs at junior colleges and the universities is about 74 percent. This average is distorted by four programs with passing averages below 60 percent. Eleven of the

associate degree programs have passing rates of 80 percent or above. During the six-year period of this survey the passing rate was 79 percent for all programs.

The high admissions standards of several of the baccalaureate programs having limited enrollment assure higher passing rates on the licensure examination.

For several years the Prairie View A&M University school of nursing has been working to improve the performance of its graduates. Vestibule (preparatory) courses were added a few years ago to provide additional nursing education experience, and the average performance has improved somewhat since that time.

Detailed information on the licensing examination for registered nurses, including tables reflecting comparative performance data with the national scores, begins on page 55.

## Optometry

Among graduates of the University of Houston school of optometry taking the state licensing examination from 1973 through 1978, 91 percent of them passed and were licensed.

The examination is prepared by the State Board of Optometry Examiners, so comparisons with other states cannot be made. However, a reasonably valid comparison may be made with the candidates from out-of-state schools who took the Texas licensure examination.

Some 58 percent of the candidates from those out-of-state schools who took the Texas examination between 1973 and 1978 passed. The passing rate for all candidates was 80 percent.

Additional information and statistical data begin on page 63.

## Pharmacy

Graduates of two of the three state-supported pharmacy schools in Texas regularly have a passing rate of above 90 percent on the theory examination for state licensure. On the practical and oral examination, given after the student passes the theory test and serves a 400-clock-hour internship, the passing percentage increases to 90 percent or more for all three schools.

The University of Texas school of pharmacy, whose graduates perform well on the licensure examination, has reported that test scores of their graduates are compared with national norms and with individual student grades in pharmacy courses. Information gleaned from that analysis is used to improve course content.

A detailed description of the pharmacy licensure process, including performance records by institution, starts on page 67.

## Physical Therapy

A 90 percent rate of passing was found among graduates of the three programs in physical therapy who took the licensure examination from 1973 through 1977.

The examination used in Texas is prepared by the Professional Examination Service in New York. One of the institutions reported that the schools did not have access to information concerning performance on the examination. The State Board of Physical Therapy Examiners was unable to acquire the information for the staff because it is considered confidential.

Additional information on physical therapy licensure and a comment on the physical therapy assistant program begin on page 71.

## Psychology

The State Board of Examiners of Psychologists is authorized to administer the certification examination for the psychologist (doctoral) and the psychological associate (master's level). There is a different examination for each level.

Nine public institutions offer doctoral programs in psychology. Among their graduates who took the licensure test between 1973 and 1978, the passing rate was 83 percent. Candidates from the independently supported Baylor University, Texas Christian University and Rice University passed at a rate of 74 percent. The combined passage rate for all Texas candidates was 82 percent. Out-of-state candidates also had a passing rate of 82 percent.

At the psychological associate or master's degree level, 77 percent of the candidates from 21 public institutions passed. Graduates of the eight independent institutions passed at a rate of 84 percent. The combined passage rate for all Texas candidates was 78 percent. Out-of-state candidates had a 79 percent success rate.

The comparison of state and national scores for psychologists from 1973 to 1978 shows that Texas candidates have performed slightly better than the national average most years.

The lack of information at the institutions on the performances of their graduates on the certification and licensure examinations, which was evident to the staff during this study, is likely to improve in the future. The staff of the Texas State Board of Examiners of Psychologists reported that the information on the candidates is available to the institutions upon request and that during the course of this study, five institutions did request the data. In the future, the Board has indicated they intend to provide exam information to

all schools. Details begin on page 75.

## Veterinary Medicine

As in optometry, only one professional program in veterinary medicine is operating in Texas at the present time. Graduates of that program have an outstanding success record on the state licensure examination. From 1973 through 1978 an extraordinary 99 percent of the Texas A&M University graduates who sat for the state licensure examination passed on their first attempt at the test.

During that period, many out-of-state graduates also took the Texas licensure examination. A sample of eight out-of-state schools found that 96 percent of them passed and were licensed. The aggregate passing rate was 98 percent.

See page 83 for additional descriptive and statistical information on the veterinary medical licensure process, including results of the licensure examination for a six-year period.

## ARCHITECTURE

Architects have been licensed and regulated in Texas since 1937, when the Architect's Registration Law was enacted by the legislature. The same year the Engineering Registration Board was created by the Legislature. Creation of these two regulatory agencies may have been considered to be the direct result of the March 18, 1937, school building explosion at New London, Texas, in which several hundred students and faculty were killed. Work leading to regulation of these two professions had actually begun much earlier under the leadership of architects and engineers in Texas. Since the original statute was enacted, amendments have been added to upgrade standards for restrictions on licensure of architects in this state.

Until 1955, candidates with an accredited professional degree in architecture and at least three years experience in architectural practice were registered without having to take a licensing examination. Amendments adopted in 1955 required applicants for the registration examination to have eight years of experience, mostly under licensed architects, or a combination of approved education and experience totaling eight years. Those requirements still exist, but amendments adopted in 1973 further stipulate that all applicants for licensure after June 30, 1980, have a degree from a recognized school of architecture.

The examination for candidates for licensure in Texas is administered nationally. It is prepared by an examination team of representatives from the Educational Testing Service, educators and practitioners. The National Council of Architectural Registration Boards (NCARB), a group which records standards for certification for the states, finances preparation of the exam. The examination fee is $75 for a Texas resident and $100 for a nonresident. Reciprocal registration also costs the applicant $100. Applicants for licensure who do

not have an accredited degree in architecture are required to take the qualifying test which is given annually in June. The professional examination is given each December. The qualifying test serves as an effective screening device, as shown by the performances of the applicants from 1973 through 1977. In that period only 20 percent passed it. Those applicants did not have an accredited architecture degree.

The 16-hour professional examination is given over a two-day period. It is administered in each state; 38 states, including Texas, require annual renewal of the license.

Architecture programs are offered by the University of Texas at Austin, University of Texas at Arlington, Texas A&M University, Texas Tech University, University of Houston and Rice University. The performance of the graduates of those programs is shown in Table 1 at the end of this section.

In many professions, the new graduate qualifies for the licensure examination upon graduation. In architecture, however, few have acquired the requisite experience before graduation. Fulfillment of the criteria for practical experience interrupts the continuity of the educational/licensure process. It tends to invalidate program evaluations based solely upon scores in a particular examination year because graduates of two, three or more classes may be taking the test at the same time. In addition, the experience graduates acquire prior to taking the licensure examination affects test performance.

As shown in Table 1, the Texas Board of Architectural Examiners from 1973 through 1977 administered the licensure test to 1,330 graduates who were attempting it for the first time. Of that total, 703 held the bachelor of architecture degree from state-supported schools of architecture in Texas; 40 from an independent college, Rice University, and 218 from an out-of-state school. A total of

94 did not have a professional degree. There were 215 candidates taking the examination for the first time who had the master of architecture degree. Of that total, 92 were from three state-supported colleges, 42 from Rice and 81 from out-of-state schools. The passing rate in each of those several categories was about the same. From one-half to two-thirds of the candidates passed the examination on the first try.

Comparison with other states is difficult because requirements for experience vary from state to state. In Texas an applicant with the requisite experience but without a degree may take the examination alongside candidates having only a baccalaureate degree and with those having the master's degree.

One comparison may be made on the basis of the performance of Texas graduates with those of other states who sit for the Texas examination. From 1973 through 1977, 63 percent of the graduates with bachelor's degrees from public colleges who took the licensing examination passed. A 95 percent passing rate was recorded for Rice graduates. The success rate of out-of-state graduates taking the Texas examination was 65 percent. For candidates who did not have a professional degree, the passing rate was 74 percent.

At the master's level, the passing rate changed. During this period, 58 percent of the graduates of the three publicly supported programs passed the exam. Rice University graduates had a 79 percent rate of success. Of the out-of-state graduates who were examined, 70 percent passed.

In the five-year period covered by this study, about two-thirds of the candidates for licensure passed the first time they took the examination. Candidates failing the exam the first time may take it again. Their success rate on later attempts is below that of individuals taking the exam for the first time, as shown below:

| | Number of Candidates Retaking the Exam | Number Passing | Percent Passing |
|---|---|---|---|
| 1974 | 252 | 162 | 64% |
| 1975 | 118 | 39 | 33% |
| 1976 | 136 | 36 | 27% |
| 1977 | 178 | 70 | 39% |
| TOTAL | 684 | 307 | 45% |

Stringent architectural licensure requirements have led to development of the Texas Institute of Building Designers. Its members, who are not licensed by the state, design buildings at less cost than licensed architects. No professional requirements exist for institute membership, and an estimated 40 to 60 percent of the small building design in Texas is handled by its members. Between 500 and 1,000 building designers are thought to be practicing in the state.

Table 1

FIVE-YEAR SUMMARY OF
ARCHITECTURE LICENSURE EXAMINATION
RESULTS
1973-1977

| INSTITUTION AND TYPE DEGREE | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| B. Arch degree: | | | |
| Public | | | |
| Texas A&M U. | 73 | 41 | 56% |
| Texas Tech U. | 220 | 146 | 66 |
| UT Austin | 359 | 229 | 64 |
| U. of Houston | 111 | 67 | 60 |
| Subtotal | 763 | 483 | 63% |
| Independent | | | |
| Rice University | 40 | 38 | 95% |
| Out-of-state | 218 | 141 | 65% |
| No prof. degree* | 94 | 70 | 74% |
| All bachelor's: | 1,115 | 732 | 66% |
| M. Arch degree: | | | |
| Public | | | |
| Texas A&M U. | 74 | 43 | 58% |
| UT Austin | 15 | 8 | 53 |
| UT Arlington | 3 | 2 | 67 |
| Subtotal | 92 | 53 | 58% |
| Independent | | | |
| Rice University | 42 | 33 | 79% |
| Out-of-state | 81 | 57 | 70% |
| All master's: | 215 | 143 | 67% |
| TOTAL | 1,330 | 875 | 66% |

* This category includes candidates having the four-year Bachelor of Environmental Design degree, those with only two years of college and those not having a degree of any kind.

## CERTIFIED PUBLIC ACCOUNTANCY*

Public accountancy regulation was begun in Texas in 1915. The process was improved with enactment of the Public Accountancy Act of 1945 which provided the statutory basis for the present Board of Public Accountancy.

Texas uses the national standardized exam prepared and scored by the American Institute of Certified Public Accountants. It is given each year in May and November throughout the United States. It tests candidates in four subject areas of auditing, commercial law affecting public accounting, theory of accounts and practice of accounting. Each part is graded separately, and there is no composite score for each candidate. The 20-hour examination is given over a period of two and a half days. Minimum passing grade on each part is 75 out of 100 points. The current fee for taking all parts of the exam is $60.

The total number of candidates writing each of the two annual examinations has increased from around 3,000 in 1973 to nearly 5,000 in 1977, including retakes. The number of successful candidates, however, is usually less than 20 percent.

The unusual feature of the following five-year summary, as reported by the Sunset Commission, is the low success rate on the examination. Several reasons for this condition have been discussed with those who are well informed

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*Extensive analytical work on two CPA exams, November 1976 and May 1977, has been carried out by Professor Allen Bizzell for the Texas State Board of Accountancy. His analysis is a detailed study of the candidates' characteristics and their performance on the CPA licensure examination. Year-to-year examination records are expected to be available as long as the Board of Accountancy continues to conduct the annual analysis, but such records are not available prior to November 1976.

on the CPA examination. In addition to the obvious fact that the examination is difficult and challenging, other factors are that candidates do not have to have the baccalaureate degree and may be eligible for the exam with no more than two years of college.

CPA EXAMINATION DATA
FIVE-YEAR TOTALS
1973-1977

| | May | November |
|---|---|---|
| Total number writing the examination | 19,396 | 19,793 |
| Number of CPA certificates granted | 1,248 | 1,265 |
| Number of certificates withheld pending completion of experience requirements | 1,692 | 2,094 |
| Total successful candidates | 2,940 | 3,359 |
| Percentage successful | 15% | 17% |
| Total unsuccessful candidates* | 16,456 | 16,434 |
| Percent unsuccessful | 85% | 83% |

Candidates are classified as not passing if they do not pass all parts for which they are eligible, they do not take all parts for which they are eligible

*This category includes those candidates who passed one or more of the four parts of the examination but have not passed all four.

(and suffer a penalty) or they are not eligible for all parts of the exam.

Accounting and business administration majors are often encouraged to take the CPA examination even though they may not have planned to sit for it until late in their educational program.

The information listed below was reported by Bizzell in his analysis of CPA candidates' characteristics. They illustrate the diversity of some of those characteristics:

-- The average time since the candidates had been full-time college students increased slightly from 2.77 years in November 1976 to 2.82 in May 1977. In November 1976, 210 candidates had been out of college 10 years or longer; in May 1977, 317 had been out at least that long. In November 1976, some 1,132 (26 percent) of the candidates had been out of college less than one year; in May 1977, the number declined to 944 (20 percent).

-- Most candidates had an undergraduate major in accounting: 3,308 (77 percent) of 4,309 in November 1976, and 3,788 (81 percent) of 4,698 in May 1977. Students who qualify for the exam, many with a waiver of the practice requirement, are encouraged to take it for practice to find out what they do not know as a preliminary screening process and to help them be better prepared the next time around. While many of the professions, such as medicine, veterinary medicine, pharmacy and dentistry screen at the admissions level, others, such as accounting which have few admission requirements, screen at the professional licensure level.

The examination administered to Texas CPA candidates is the Uniform Certified Public Accountant Examination, and it is used by all the states and jurisdictions for determining eligibility to be certified as a CPA. The board can grant reciprocity when prescribed standards are met.

Those seeking to qualify for the CPA Certificate must pass the uniform CPA examination and meet residency, experience and educational requirements as well as certain moral character standards. Candidates are eligible to take the examination if they meet one of the following conditions:

-- Have a master's degree in accounting or in business administration, a five-year professional degree in accounting or an LLB or JD degree and have completed 29 semester hours in the study of accounting and related business subjects with at least 20 of the 29 hours in accounting. Under these conditions, one year of experience is required before the certificate is issued.

-- Have a four-year baccalaureate degree, such as the BBA, and also have completed at least 29 semester hours in the study of accounting and related business subjects with at least 20 of the 29 hours in accounting. Under this condition, two years of experience is required before the certificate is issued.

-- At least 60 semester credit hours from a recognized college will authorize the candidate to take the examinations in auditing, law and theory. Under this condition, six years of experience is required of the candidate before he can take the exam on accounting practice.

The Board of Accountancy policies on eligibility to take the examinations also state that candidates must pass two or more subjects in a single examination before they can earn any credit toward the certificate. If they pass two subjects, for example, they earn two credits (toward the CPA certificate). After two credits are earned, they receive credit for any other subject subsequently passed. Public accountants may pass the examination one subject at a time.

From the above, it is evident that candidates can take part of the examination and defer the remainder to a later time; however, a penalty will be

imposed unless the candidate submits an excuse acceptable to the board.

Contrary to the conditions existing in some other licensure systems and because of the multiple ways through which one can qualify to take the CPA exam, the educational backgrounds of the candidates vary widely, and the prerequisite accounting courses are not always taken in a university program. In the November 1976 examination candidates had taken their accounting courses at 29 public universities, 23 independent universities, 14 public junior colleges and one medical school, as shown in Tables 2 and 3.

These tables show only the sum of the number of candidates on each of the four exams and the sum of those passing. The data provided the staff by the Board of Accountancy are laid out in a similar manner, showing results on each of the four exams. The number of candidates taking the exams varies from one to the other; some candidates will have previously passed one or more of the four parts and some candidates may have elected to take only one or more and not all. Under these conditions, it is impractical and misleading to try to arrive at a pass/fail rate for candidates from each institution. We have displayed the data on the attached tables to convey a general idea of which schools provide the candidates for the Texas CPA examination.

Despite the limitations on comparison of CPA examination results with those of other states, the results of a 1975 study shown below, give passing percentages by subject:

RESULTS OF THE MAY 1975 CPA EXAMINATION
AT THE NATIONAL LEVEL

| Subject | High | Low | Texas | All States |
|---|---|---|---|---|
| Auditing | 49% | 8% | 25% | 27% |
| Business Law | 60 | 20 | 37 | 34 |
| Accounting Theory | 63 | 18 | 31 | 32 |
| Accounting Practice | 61 | 18 | 29 | 32 |

When viewed at the national comparison level on a percentage basis, the performance of Texas candidates is approximately that of the candidates in all the other states.

Table 2

SELECTED INSTITUTIONS:
CROSSTABULATION OF PASS RATE BY SCHOOL
WHERE MAJORITY OF CANDIDATE'S ACCOUNTING COURSES WERE COMPLETED*
NOVEMBER 1976

| Public Universities | Number of ** Candidates | Number *** Passing | Percent Passing |
|---|---|---|---|
| Angelo State U. | 103 | 12 | 12% |
| Arlington State College**** | 30 | 7 | 23 |
| East Texas State U. | 211 | 22 | 10 |
| Lamar U. | 337 | 51 | 15 |
| Midwestern State U. | 221 | 18 | 8 |
| North Texas State U. | 535 | 126 | 24 |
| Pan American U. | 167 | 16 | 10 |
| Prairie View A&M U. | 4 | 1 | 25 |
| Sam Houston State U. | 269 | 45 | 17 |
| Southwest Texas U. | 316 | 67 | 21 |
| Stephen F. Austin U. | 274 | 48 | 18 |
| Sul Ross State U. | 24 | 5 | 21 |
| Tarleton State U. | 75 | 4 | 5 |
| Corpus Christi State U. | 77 | 19 | 25 |
| Texas A&I U. | 218 | 48 | 22 |
| Texas A&M U. | 565 | 130 | 23 |
| Texas Southern U. | 71 | 3 | 4 |
| Texas Tech U. | 868 | 190 | 22 |
| Texas Woman's U. | 3 | - | - |
| Texas Eastern U. | 17 | 3 | 18 |
| Univ. of Houston | 1,096 | 307 | 28 |
| UH Clear Lake City | 68 | 15 | 22 |
| UT Arlington | 690 | 212 | 31 |
| UT Austin | 1,702 | 499 | 29 |
| UT El Paso | 200 | 54 | 27 |
| UT Dallas | 22 | 6 | 27 |
| UT Permian Basin | 108 | 10 | 9 |
| UT San Antonio | 124 | 52 | 42 |
| West Texas State U. | 219 | 48 | 22 |

* Based upon the Bizzell analysis.
** This column is the sum of all persons taking each of the four exams. A person taking each of the four exams will be counted four times in this column.
*** In the manner described above, this column is the sum of all passes.
**** These candidates completed their accounting courses several years before Arlington State became UT Arlington.

Table 3

SELECTED INSTITUTIONS:
CROSSTABULATION OF PASS RATE BY SCHOOL
WHERE MAJORITY OF CANDIDATE'S ACCOUNTING COURSES WERE COMPLETED
NOVEMBER 1976*

| Independent Universities | Number of** Candidates | Number*** Passing | Percent Passing |
|---|---|---|---|
| Abilene Christian U. | 170 | 22 | 13% |
| Austin College | 31 | 4 | 13 |
| Baylor College of Medicine | 3 | 1 | 33 |
| Baylor U. | 331 | 79 | 24 |
| Bishop College | 14 | - | - |
| Dallas Baptist College | 29 | 4 | 14 |
| Hardin-Simmons U. | 18 | 2 | 11 |
| Houston Baptist U. | 38 | 5 | 13 |
| Howard Payne College | 26 | 4 | 15 |
| McMurry College | 66 | 13 | 20 |
| Our Lady of the Lake U. | 18 | 3 | 17 |
| Rice U. | 43 | 19 | 44 |
| St. Edward's U. | 37 | 6 | 16 |
| St. Mary's U. | 189 | 45 | 24 |
| Southern Methodist U. | 512 | 161 | 31 |
| Southwestern Adventist College | 8 | - | - |
| Southwestern U. | 31 | 6 | 19 |
| Texas Christian U. | 148 | 49 | 33 |
| Texas Lutheran College | 60 | 21 | 35 |
| Texas Wesleyan College | 72 | 13 | 18 |
| Trinity U. | 58 | 23 | 40 |
| U.of Corpus Christi | 15 | - | - |
| U.of Dallas | 8 | - | - |
| U.of Mary Hardin-Baylor | 26 | 5 | 19 |
| U.of St. Thomas | 42 | 7 | 17 |
| Public Junior Colleges | | | |
| Alvin Community College | 2 | - | - |
| Blinn College | 4 | - | - |
| Dallas County**** | 4 | 3 | 75 |
| Eastfield College | 3 | - | - |
| El Centro College | 6 | 3 | 50 |
| Midland College | 4 | 1 | 25 |
| North Harris County College | 1 | 1 | 100 |
| Odessa College | 4 | - | - |
| Panola Junior College | 4 | - | - |
| Ranger Junior College | 2 | - | - |
| Richland College | 9 | 5 | 56 |
| San Antonio College | 7 | - | - |
| Tarrant County Junior College | 16 | 1 | 6 |
| Victoria College | 4 | - | - |

*Based upon the Bizzell analysis.
**This column is the sum of all persons taking each of the four exams, thus a person taking each of them will be counted four times.
***In the manner described above, this column is the sum of passes.
****This probably refers to one of the older campuses in the Dallas County Community College System, such as El Centro. We conclude this entry refers to one candidate who took all four parts of the exam and passed three of them.

## DENTISTRY

The Texas State Board of Dental Examiners administers licensure examinations to dental and to dental hygiene applicants who seek to practice in Texas.

District dental examining boards were created in 1889, and in 1897 a state-level board was established. A six-member board was authorized in 1919, with membership increased to nine in 1971.

Texas has three dental schools: the University of Texas Health Science Centers at Houston and San Antonio and the independent Baylor College of Dentistry in Dallas. The two older schools, UTHSC at Houston and Baylor, each have over 100 dental graduates take the licensure examination annually.

Through the use of statistical data on licensure examinations for graduates of dental schools in Texas, several types of comparisons of candidates can be made. One is on how the graduates of dental schools in Texas perform on the Texas licensure exam. Another is how well that group of candidates performs when compared to out-of-state dental graduates who take the licensure exam in Texas. Still another way to compare dental licensure exam results is to compare the licensure examination results of all the graduates of dental schools selected for comparison. In the case of the latter type comparison, not all Texas dental school graduates, for example, will take the Texas licensure exam. Most do but some of the graduates may intend to practice in another state and would therefore take that state's licensure exam.

For the first of these comparisons, data for a six year period, from 1973 through 1978, was assembled. During that period the dental school at Baylor in Dallas had 751 of its graduates take the state licensure exam and 695 passed for a rate of 93 percent. During the same six year period, the University of Texas Dental Branch in Houston had 673 of its graduates take the exam and 633

passed for a rate of 94 percent. The newer dental school at the University of Texas Health Science Center in San Antonio, which had its first state board candidates in 1974, had 124 take it and 113 passed for a rate of 91 percent.

A comparison of the licensure results of candidates from the Texas dental schools with those of selected other dental schools is shown on Table 4. The eight publicly supported dental schools in the comparison are in the South, the middle United States and the far West. The six programs in independent institutions are mainly in the South, New England and the far West. The data used for preparing Table 4 covers five years of licensure results and gives the number of candidates from each dental school who took a licensure exam anywhere in the United States, thus the number of candidates listed by the name of the school is the number who took the exam from that school in all the states. The number of states, or state boards, administering the exam to the graduates of each dental school, is shown on Table 5.

Graduates of the eight out-of-state publicly supported programs averaged a 90 percent passing rate over the five-year period covered in this study. The six out-of-state independent institutions' graduates averaged an 87 percent passing rate over the same period. All three Texas dental schools were above 90 percent over the same period.

Further comparison may be drawn on the basis of the performance of out-of-state dental school graduates who sit for the Texas licensure examination. From 1973-1977, 61 percent of the candidates from out-of-state schools who took the examination were able to pass on their first effort.

Graduates of dental schools, as in many of the professions, often seek licensure to practice in states other than the one in which they attended dental school. The records of in-state and out-of-state licensure examinations,

provided by the staff of the Board of Dental Examiners, presents another excellent way to compare licensure examination results. Each year many of the graduates of the Texas programs take a licensure examination in another state and the results are tabulated along with those of all dental licensure candidates. Table 5 illustrates the results of these examinations for the period 1973 through 1977, showing not only passing rates for a school's graduates but also the numbers from each school who are apparently planning to practice out-of-state.

Table 4

FIVE-YEAR SUMMARY OF
DENTAL LICENSURE EXAMINATION SCORES
1973-1977

| Institution | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| U.of Kentucky | 330 | 307 | 93% |
| U.of Maryland | 735 | 680 | 93 |
| U.of North Carolina | 383 | 355 | 93 |
| Ohio State U. | 1,036 | 907 | 88 |
| U.of Tennessee | 778 | 707 | 91 |
| U.of Virginia | 665 | 595 | 89 |
| U.of Washington | 512 | 466 | 91 |
| UCLA | 543 | 470 | 87 |
| Subtotal | 4,982 | 4,487 | 90% |
| U.of Pacific | 840 | 718 | 86% |
| U.of Southern California | 745 | 678 | 91 |
| Georgetown U. | 768 | 667 | 87 |
| Emory U. | 633 | 564 | 89 |
| Meharry Medical College | 163 | 120 | 74 |
| Harvard U. | 98 | 89 | 91 |
| Subtotal | 3,247 | 2,836 | 87% |
| Baylor U. | 779 | 704 | 90% |
| UTHSC Houston | 612 | 572 | 93 |
| UTHSC San Antonio | 91 | 84 | 92 |
| Subtotal | 1,482 | 1,360 | 92% |
| TOTAL | 9,711 | 8,683 | 89% |
| Out-of-state candidates taking the licensure exam, for the five years 1974-1978 | 549 | 336 | 61% |

Table 5

COMPARISON OF ANNUAL PASSING RATES OF TEXAS
DENTAL SCHOOL GRADUATES WITH NINE OTHER STATES ON ALL STATE BOARDS

| Institution | 1973 Number Taking | 1973 Percent Passing | 1973 Number of State Bds. | 1974 Number Taking | 1974 Percent Passing | 1974 Number of State Bds. | 1975 Number Taking | 1975 Percent Passing | 1975 Number of State Bds. | 1976 Number Taking | 1976 Percent Passing | 1976 Number of State Bds. | 1977 Number Taking | 1977 Percent Passing | 1977 Number of State Bds |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Univ.of Pacific | 114 | 92% | 7 | 257 | 78% | 13 | 148 | 86% | 7 | 143 | 88% | 7 | 178 | 89% | 14 |
| UCLA | 102 | 90 | 7 | 107 | 81 | 4 | 110 | 91 | 3 | 115 | 81 | 7 | 109 | 90 | 9 |
| Southern Cal. | 137 | 89 | 8 | 150 | 86 | 6 | 147 | 93 | 7 | 166 | 94 | 15 | 145 | 93 | 7 |
| Georgetown | 132 | 91 | 15 | 119 | 92 | 17 | 159 | 87 | 21 | 164 | 83 | 23 | 194 | 84 | 27 |
| Emory | 131 | 90 | 10 | 105 | 90 | 14 | 124 | 85 | 18 | 132 | 89 | 24 | 141 | 91 | 21 |
| Loyola(Chicago) | 148 | 86 | 24 | 163 | 82 | 22 | 151 | 87 | 26 | 163 | 90 | 21 | 183 | 88 | 20 |
| Northwestern | 113 | 74 | 18 | 104 | 81 | 20 | 125 | 86 | 20 | 134 | 89 | 21 | 163 | 92 | 26 |
| Virginia | 102 | 95 | 6 | 118 | 88 | 13 | 131 | 90 | 13 | 161 | 89 | 11 | 153 | 86 | 11 |
| Washington | 102 | 93 | 13 | 95 | 91 | 14 | 101 | 89 | 6 | 105 | 96 | 13 | 109 | 86 | 11 |
| Baylor | 102 | 90 | 9 | 248 | 94 | 19 | 142 | 91 | 12 | 134 | 88 | 11 | 153 | 87 | 14 |
| UTHSC Houston | 39 | 97 | 5 | 110 | 97 | 8 | 120 | 92 | 6 | 132 | 99 | 7 | 151 | 84 | 7 |
| UTHSC San Antonio | -- | -- | - | 16 | 87 | 1 | 16 | 94 | 6 | 28 | 96 | 1 | 31 | 90 | 1 |

NOTE: These data show the number of dental graduates examined by all state boards during the years shown. For example, in 1973, there were 102 graduates from UCLA who took the dental licensure examination and there were seven state boards that examined one or more of the candidates. The passing rate for the UCLA graduates for that year, regardless of where the candidate took the test, was 90 percent.

## DENTAL HYGIENE

Responsibility for administering the licensure examination for dental hygienists in Texas lies with the Texas State Board of Dental Examiners. Annual examinations are administered to candidates who have completed programs in Texas or out-of-state schools.

Professional standards for the programs are established by the house of delegates of the American Dental Association. The national dental hygiene examination prepared by the American Association of Dental Examiners, is administered by the Board of Dental Examiners. A new written national examination is prepared each year with the assistance of those in the profession. State boards prepare the clinical portion of the examination. Pass/fail data were available only for the entire exam; a separate breakdown of performance on the two parts is not recorded.

The examination is administered at least once a year at each of the dental schools in Dallas, Houston and San Antonio. The clinical part of the exam necessitates the use of dental facilities. The examination fee is $50.

Dental hygiene programs are offered by seven community junior colleges, three universities and three dental schools. The community junior colleges and two universities offer the associate degree, and one dental school (Baylor) offers the bachelor of science degree. The remaining two dental schools offer the certificate only. Performance data on the licensure examination of dental hygienists are shown in Table 6.

National examination results are not available, but the number of out-of-state applicants taking the exam in Texas illustrates the level of proficiency of Texas-based programs and their graduates. Over the four-year period, 1,110 Texas graduates took the exam and 966 passed for a proficiency rate of 87 percent.

During the same period there were 328 examinees from other states and 242 or 74 percent of them passed.

Table 6

FOUR-YEAR SUMMARY OF DENTAL HYGIENE
PROFESSIONAL LICENSURE EXAMINATION RESULTS
1975-1978

| Institution | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| Junior college (AD) programs: | | | |
| Amarillo College | 67 | 60 | 90% |
| Bee County College | 77 | 65 | 84 |
| Del Mar College | 55 | 41 | 75 |
| El Paso Comm. Col. | 52 | 46 | 88 |
| Tarrant Co. Jr. Col. | 93 | 62 | 67 |
| Tyler Junior Col. | 115 | 97 | 84 |
| Wharton Jr. College | 89 | 82 | 92 |
| Subtotal | 548 | 453 | 83% |
| Dental school programs: | | | |
| Baylor-Caruth (BS) | 145 | 140 | 97% |
| UTHSC Houston (Cert.) | 171 | 164 | 96 |
| UTHSC San Antonio (Cert.) | 41 | 38 | 93 |
| Subtotal | 357 | 342 | 96% |
| University programs: | | | |
| Lamar University (AD) | 74 | 56 | 76% |
| Midwestern State U. (BS/AD) | 49 | 41 | 84 |
| Texas Woman's University (BS) | 82 | 74 | 90 |
| Subtotal | 205 | 171 | 83% |
| Total (Texas) | 1,110 | 966 | 87% |
| Out of state: | | | |
| Subtotal | 328 | 242 | 74% |
| TOTAL | 1,438 | 1,208 | 84% |

## ENGINEERING

The Texas State Board of Registration for Professional Engineers, established in 1937, licenses qualified candidates as professional engineers and enforces the Texas Engineering Practice Act.

That act provides for three types of registration on the basis of (1) education and experience, (2) experience and examination or (3) reciprocity. The fee for registration is $50.

The first type of registration is open to those candidates who are graduates of engineering curricula accredited by the Engineers' Council for Professional Development (ECPA) or approved by the board and who have at least four years of acceptable engineering experience. Texas is the only state which provides for registration without examination.

While the second type of registration does not require an accredited engineering degree, it does require that candidates have at least eight years of acceptable engineering experience at the time of application. They also must pass two eight-hour examinations.

Texas uses the examinations prepared by the National Council of Engineering Examiners which are given throughout the United States and its jurisdictions. Although the examinations are not required for registration in Texas, many students and graduates of ECPD-accredited curricula take one or both of them, since they are required for registration in other states. The fundamentals of engineering examination must be passed before the principles and practice examination may be taken. In this state it is not necessary to meet the experience requirements for registration before taking the principles and practice examination.

The third type of registration, by reciprocity, is open to those candidates who were registered originally under standards no less stringent than those of Texas.

Data for this study are on the engineering fundamentals portion of the examination only and cover two distinct groups of examinees: (1) students or graduates of engineering programs which have ECPD or board approval and (2) applicants for registration who do not have accredited engineering degrees but who have already acquired the necessary eight years of experience and have received Board approval for registration contingent on their passing both examinations. Texas schools which have ECPD-accredited programs are the University of Houston, Lamar University, Texas A&M University, Moody College, Prairie View A&M University, Texas A&I University, Texas Tech University, University of Texas at Arlington, University of Texas at Austin, University of Texas at El Paso, Trinity University, Rice University and Southern Methodist University. As shown in Table 7, not all of those institutions had graduates taking examinations during the period of this study. The fact that not all candidates for registration in Texas are required to take examinations keeps the number of tests administered lower than it might otherwise be.

During the six-year period from 1973 through 1978, the engineering board examined 6,401 students or graduates of ECPD-accredited curricula in Texas. Some 79 percent of those from state-supported programs passed, while Rice and Southern Methodist University graduates had a 96 percent passing rate. The statewide passing rate was 80 percent.

Passing rates at the national level seem to be about the same as those for graduates of publicly supported engineering programs in this state. Statistics for three consecutive examinations in 1976 and 1977, in which over 28,000

candidates were examined, reveal passing rates of 77 percent on the first two examinations and 78 percent on the third. On the basis of these data, the performance of engineering graduates from Texas programs is about the same as the national sample in 1976 and 1977.

Table 7

SIX-YEAR SUMMARY OF STUDENT RESULTS ON THE EXAMINATION IN THE FUNDAMENTALS OF ENGINEERING 1973-1978

| Institution | Number Taking | Number Passing | Percent Passing |
|---|---|---|---|
| Lamar U. | 350 | 160 | 46% |
| Prairie View A&M U. | 12 | 0 | 0 |
| Texas A&I U. | 186 | 180 | 97 |
| Texas A&M U. | 2,372 | 1,885 | 79 |
| Texas Tech U. | 696 | 576 | 83 |
| UT Arlington | 358 | 280 | 78 |
| UT Austin | 1,625 | 1,400 | 86 |
| UT El Paso | 201 | 130 | 65 |
| U.of Houston | 453 | 354 | 78 |
| Subtotal | 6,253 | 4,965 | 79% |
| Rice U. | 68 | 66 | 97% |
| Southern Methodist U. | 80 | 76 | 95 |
| Subtotal | 148 | 142 | 96% |
| TOTAL | 6,401 | 5,107 | 80% |

NOTE: For several years some of the engineering programs in Texas required that students take the engineering licensure examination prior to graduation. Many students took the examination who would have been licensed automatically after receiving their degrees and acquiring the experience for licensure without examination. In addition, there were large numbers of foreign students in engineering who had no intention of practicing in the United States. These conditions led many to take the exam only because the institution required it, producing many candidates who were not dedicated to passing the licensure examination. It has been reported that many of the students would simply show up for the exam, thereby meeting the institution's requirement, and then leave before finishing it.

## LAW

Admission to the State Bar has been regulated since Texas became a state in 1846, with the Supreme Court having jurisdiction in admitting new lawyers to practice. The court functions as an examining board through the Board of Law Examiners, a board of nine members who must hold the same qualifications as Supreme Court judges.

While the Board of Law Examiners has authority to admit new attorneys to the bar through the licensure examination, it has no further jurisdiction over the practice of law or for curriculum or the operations of law schools. It does not have power to approve the course of study for those who seek to take the bar examination.

According to rules of the Texas Supreme Court, individuals who intend to study law in an approved law school in Texas must file a declaration of intention to study law with the court no later than 120 days after enrolling. They also must remit a fee of $75. Upon completion of requirements for the bar examination, the candidate must pay a $75 examination fee to the Board of Law Examiners. The two-day bar examination is given each year in February and July.

Bar examination results for the eight law schools in Texas, which had over 5,400 candidates taking the bar from 1974 through 1977, are shown in Table 8. With the exception of graduates from one institution, over 90 percent of the candidates passed the bar examination the first time they took it during the period surveyed. The success of most candidates is due in large part to stringent law school admissions policies which require that the applicant hold a baccalaureate degree, have an acceptable grade point average on undergraduate work and make an acceptable score of the Law School Admission Test. In addition, a Committee on Admissions in each of 17 geographical districts makes a

preliminary determination of the moral character of law school applicants.

In the summer of 1977, the Board of Law Examiners met with representatives of the Texas Southern University law school to discuss the performance of TSU graduates on the state bar exam over the past several years. The record of that meeting showed a distinct need to upgrade admission requirements.

Only about half of the bar examination is given on a national basis, with the remaining essay portion prepared and scored at the state level. Comparison may be drawn on the overall pass/fail rate on the 200 multiple-choice questions prepared by the National Conference of Bar Examiners. It is taken by bar candidates in at least 34 states. While this portion reflects only about half of the candidate's final score, the results do permit a broad comparison not otherwise available. Shown below is a comparison of passing percentages of bar candidates in five states during the year 1976 with results of the February 1978 bar exam given in Texas:

NATIONAL BAR EXAMINATION
COMPARATIVE PASSING PERCENTAGES FROM SELECTED STATES

| State | Exam Date | Percent Passing |
|---|---|---|
| California | February 1976 | 54% |
| Michigan | July 1976 | 95 |
| Mississippi | July 1976 | 22 |
| New York | March 1976 | 65 |
| Pennsylvania | February 1976 | 73 |
| Texas | February 1978 | 85 |

The good showing of the Texas bar candidates, when compared to those in other states, is consistent on a year to year basis, as shown here in a summary of passing percentages on the Texas bar exam from 1974 through 1977:

TEXAS BAR CANDIDATES
PERCENTAGE OF APPLICANTS PASSING THE EXAM

| Exam Date | 1974 | 1975 | 1976 | 1977 |
|---|---|---|---|---|
| Winter | 87% | 89% | 90% | 86% |
| Summer | 90 | 91 | 92 | 86 |
| Fall | 86 | 90 | 91 | 85 |

The figures used in this study include candidates taking the bar for the first time as well as those retaking it. Candidates were counted as many times as they repeated the examination. More refined statistics, that is, data showing the number of first time examinees on each of the tests were not available.

When the data are applied equally to all candidates and schools, the method of comparison used in this study is equitable and fair. It provides the only way that comparative performances of Texas law school graduates on the state bar examination can be obtained with available data. Although the passing rate for the graduates of TSU is lower than the other publicly supported law schools, the officials of that institution have reported to the staff that approximately 70 percent of their graduates do finally pass the bar and become practicing attorneys in Texas.

Statistical information for performances on the state bar examination was acquired from the staff of the Sunset Commission, which had made a comprehensive study of the Texas Bar, including the Board of Law Examiners. The report of that study is Board of Law Examiners: Staff Report to the Sunset Advisory Commission, July 28, 1978. Statistical portions of that report which were used by the staff in this study were verified and validated by the program evaluation staff of the Legislative Budget Board.

Table 8

FOUR-YEAR SUMMARY OF TEXAS BAR EXAMINATION RESULTS 1974-1977

| Public Institutions | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| Texas Southern U. | 423 | 129 | 30% * |
| Texas Tech U. | 396 | 380 | 96 |
| University of Houston | 728 | 688 | 95 |
| University of Texas | 1,493 | 1,448 | 97 |
| Subtotal | 3,040 | 2,645 | 87% |
| **Independent Institutions** | | | |
| Baylor U. | 434 | 421 | 97% |
| St. Mary's U. | 561 | 508 | 91 |
| South Texas Col. of Law | 632 | 573 | 91 |
| Southern Methodist U. | 655 | 637 | 97 |
| Subtotal | 2,282 | 2,139 | 94% |
| TOTAL | 5,322 | 4,784 | 90% |

*The institution reports that although some graduates retake the examination three or four times, ultimately 70 percent of the Texas Southern University law school graduates pass the bar. The institution states that the low percentage of students passing is due to the repeat examinations, which have a compounding effect when 30 percent of the graduates do not pass the bar exam after many attempts. This position is supported by the fact that the total number of candidates reported over several years far exceeds the total number of TSU graduates for that period.

## MEDICINE

Examination and licensure of candidates to practice medicine and osteopathy in Texas are the responsibility of the Texas State Board of Medical Examiners. The board is a descendant of the Board of Medical Census which was created in 1837 to license those seeking to practice medicine and surgery in the Republic of Texas. The medical examiners board also is authorized to license by reciprocity qualified physicians who migrate to Texas from other states.

The licensure examination for physicians is administered each year in June and December. Candidates for medical licensure in Texas who are graduates of a Texas medical school must take the Federation Licensing Examination (FLEX). The integrated three-day examination covers eight categories of the basic sciences, seven categories of the clinical sciences and clinical competence. Candidates also are tested on medical jurisprudence.

The examination, prepared by the Federation of State Medical Boards of the United States, Inc., is used in all the states and jurisdictions of the United States. It has been the basis for medical licensure in Texas since January 1, 1978. The cost for the examination is $150 and licensure by reciprocity costs $200.

To be eligible for the examination, applicants must be citizens of the United States, at least 21 years of age and of good moral character. They must have 60 semester credit hours of college credit suitable for application to the BA or BS degree at the University of Texas, and must be a graduate of a medical school or college approved by the Texas State Board of Medical Examiners at the time the degree of Doctor of Medicine or Doctor of Osteopathy was conferred. The statute also requires U.S. citizenship but the State Attorney General has determined this

requirement to be unconstitutional. The Board has examined an average of 1,025 candidates per year since 1973, about half of them graduates of Texas public medical schools.

From 1973 through 1977, over 5,000 persons took the state licensure examination. At least 86 percent of the candidates passed the examination and were licensed on their first effort. Of the candidates taking the examination, over 2,500 had graduated from one of the six publicly supported medical schools, including the Texas College of Osteopathic Medicine. There were some 964 candidates who were Baylor College of Medicine graduates and at least 293 candidates from out-of-state medical schools. There also were 1,338 graduates of foreign medical schools who took the exam during the same period.

Passing rates for graduates of the six publicly supported medical schools were the highest of all categories. Of the 2,590 candidates who took the exam, 96 percent passed. Of the 964 candidates from Baylor College of Medicine in the independent sector, 93 percent passed. The passing rate was 89 percent for the 293 candidates from out-of-state medical schools. Finally, of the 1,338 graduates of foreign medical schools who sat for the examination during this period, the passing rate was 63 percent.

The pass/fail statistical data acquired for this study indicate that graduates of the Texas medical schools perform quite well on the licensure examination the first time they take it. Graduates from medical schools in other states do almost as well, with graduates of foreign medical schools having the greatest difficulty.

Table 9

FIVE-YEAR SUMMARY OF MEDICAL
LICENSURE EXAMINATION RESULTS IN TEXAS
1973-1977

| Institution | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| UTHSC Dallas | 425 | 424 | 99% |
| UTHSC Houston | 256 | 243 | 95 |
| UTHSC San Antonio | 425 | 407 | 96 |
| UTMB Galveston | 1,167 | 1,130 | 97 |
| Texas College of Osteopathic Medicine Fort Worth * | 104 | 90 | 87 |
| Texas Tech University School of Medicine Lubbock * | 152 | 129 | 85 |
| Subtotal | 2,529 | 2,423 | 96% |
| Baylor College of Medicine | 964 | 893 | 93% |
| Subtotal | 3,493 | 3,316 | 95% |
| Graduates from out-of-state schools | 293 | 261 | 89% |
| Graduates of foreign medical schools | 1,338 | 849 | 63 |
| Subtotal | 1,631 | 1,110 | 68% |
| TOTAL | 5,124 | 4,426 | 86% |

* Data cover years 1974-1977; Texas Tech University School of Medicine and Texas College of Osteopathic Medicine were new schools and did not produce any candidates for the licensure exam in 1973.

NOTE: These data on candidates for medical licensure include those taking the examination for the first time and those who have previously failed it.

## NURSING

Requirements for license to practice as a professional nurse in Texas are established by the Board of Nurse Examiners for the State of Texas. The board is responsible for reregistration of RNs, endorsement of qualified nurses from other states, verification of those from Texas seeking a license in another state and examination of recent graduates of state-accredited registered nursing programs and of foreign programs.

Candidates for registered nurse licensure must submit a $30 fee to the state board for the examination which is given each year in July and February. The nine-hour examination is given over a two-day period. Under the direction of the National Council of State Boards, the examination is prepared by the Evaluation Service of the National League for Nursing for use throughout the United States. In accordance with the examination blueprint and confidential directions of the National Council of State Boards, questions for the examination are written by item writers. Item writers are faculty members recommended by boards of nursing who are employed in nursing education and who represent the several types of basic preparation programs for registered nurses.

In Texas, as in the other states, all applicants for registered nurse licensure take the same examination, regardless of their educational preparation. Three types of programs are offered in Texas, ranging from the three-year diploma program to the two-year associate degree program to the four-year baccalaureate degree program.

In 1973, nearly 65,000 graduates of state-approved RN education programs nationwide took the licensure examination. Of those taking the examination for the first time, the passing rate was 82 percent. There were 17,230 candidates retaking it, and their passing rate was only about 48 percent.

Performance on the licensure examination, by program, since 1973 is shown in Table 10. The six-year overall passing rate for the 18,499 examinees from all programs was 79 percent. A variation of as much as 15 percentage points in the passing rate occurs among the program types.

Another way to compare the licensure examination results of Texas nurses with those in other states is through analysis of scores on each part of the examination. The state and national means for each part of the test for the period 1973 through 1977 are compared here:

STATE AND NATIONAL MEANS
REGISTERED NURSING EXAMINATION
1973-1977

| Year* | | Medical | Surgical | Obstetric | Nursing of Children | Psychiatric |
|---|---|---|---|---|---|---|
| 1973 | National | 518.4 | 521.5 | 523.6 | 523.2 | 523 |
| | Texas | 520.1 | 502.9 | 520.9 | 505.9 | 498 |
| 1974 | National | 526.2 | 527.2 | 521.5 | 520 | 519 |
| | Texas | 499.6 | 500.6 | 497.1 | 488.1 | 489 |
| 1975 | National | 509.5 | 507.5 | 506.6 | 511.8 | 506.9 |
| | Texas | 474.2 | 477.9 | 497.7 | 484 | 467.7 |
| 1975 | National | 524 | 525.1 | 523.8 | 520.4 | 518.8 |
| | Texas | 482.8 | 490.6 | 503.7 | 479.7 | 483.3 |
| 1976 | National | 503.2 | 504.7 | 506.9 | 497.8 | 502.6 |
| | Texas | 483 | 503.8 | 507.8 | 475.4 | 488.8 |
| 1976 | National | 518.9 | 524.5 | 523 | 523.7 | 521.3 |
| | Texas | 488.6 | 497.9 | 506.2 | 500 | 497.9 |
| 1977 | National | 510.3 | 507.3 | 506.8 | 510.2 | 507.5 |
| | Texas | 495.2 | 495.2 | 501 | 494 | 484.6 |
| 1977 | National | 514.7 | 514.4 | 521.5 | 519.1 | 518.2 |
| | Texas | 494.2 | 491.4 | 507.8 | 498.7 | 496 |

* The series numbers for these tests, used to differentiate which test was given on each date, are 673 for 1973, 674 for 1974, 275 and 775 for 1975, 276 and 776 for 1976, and 277 and 777 for 1977.

These data show that means for Texas candidates were consistently below the national means during that period. These means do not indicate pass/fail rates but reflect only standard scores; raw scores are not reported by the Board of Nurse Examiners.

Table 10

SUMMARY OF REGISTERED
NURSE LICENSURE EXAMINATION RESULTS FOR BSN PROGRAMS
1973-1978

| Public BSN Programs | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| UT Arlington * | 588 | 502 | 85% |
| UT Austin | 826 | 773 | 94 |
| UTHSC Houston * | 733 | 597 | 81 |
| UT El Paso ** | 262 | 226 | 85 |
| UTMB Galveston | 480 | 398 | 83 |
| UTHSC San Antonio | 558 | 474 | 85 |
| Prairie View A&M U. | 132 | 68 | 52 |
| Texas Woman's U. | 1,804 | 1,439 | 80 |
| West Texas State U. * | 334 | 270 | 81 |
| Subtotal | 5,717 | 4,747 | 83% |
| **Independent BSN Programs** | | | |
| Baylor U. | 511 | 425 | 83% |
| Dallas Baptist College | 155 | 139 | 90 |
| Houston Baptist U. | 199 | 196 | 98 |
| Incarnate Word College | 343 | 261 | 76 |
| Texas Christian U. | 469 | 400 | 85 |
| U. of Mary Hardin-Baylor | 211 | 178 | 84 |
| U.of St. Thomas * | 121 | 104 | 85 |
| Subtotal | 2,009 | 1,703 | 85% |
| TOTAL | 7,726 | 6,450 | 83% |

* Data cover only five years.
** Data cover only four years.

Table 11

SUMMARY OF NURSE LICENSURE EXAMINATION
RESULTS FOR ADN PROGRAMS
1973-1978

| ADN Programs in Universities | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| Angelo State U. | 370 | 272 | 74% |
| Lamar U.* | 198 | 137 | 69 |
| Midwestern State U. | 299 | 257 | 86 |
| Pan American U. | 249 | 163 | 65 |
| Tarleton State U. ** | 16 | 13 | 81 |
| Southwestern Adventist **** | 46 | 26 | 57 |
| Subtotal | 1,178 | 868 | 74% |
| **ADN Programs in Community Colleges** | | | |
| Alvin Comm. College | 692 | 429 | 62% |
| Amarillo College | 262 | 160 | 61 |
| Angelina College | 319 | 183 | 57 |
| Central Texas College | 258 | 184 | 71 |
| College of Mainland *** | 113 | 93 | 82 |
| Cooke County College *** | 133 | 108 | 81 |
| Del Mar College | 351 | 301 | 86 |
| El Centro College | 986 | 721 | 73 |
| El Paso Comm. College * | 151 | 79 | 52 |
| Galveston College | 396 | 269 | 68 |
| Grayson County College | 415 | 343 | 83 |
| Howard College **** | 22 | 18 | 82 |
| Kilgore College | 241 | 164 | 68 |
| Laredo Junior College | 144 | 71 | 49 |
| Lee College **** | 38 | 34 | 89 |
| McLennan Comm. College *** | 349 | 259 | 74 |
| Odessa College | 274 | 224 | 82 |
| Paris Junior College | 176 | 126 | 72 |
| San Antonio College | 542 | 430 | 79 |
| San Jacinto College | 489 | 431 | 88 |
| Tarrant County Junior College | 380 | 338 | 89 |
| Texas Southmost College **** | 23 | 15 | 65 |
| Texarkana College | 281 | 216 | 77 |
| Subtotal | 7,035 | 5,196 | 74% |
| TOTAL | 8,213 | 6,064 | 74% |

* Data cover only four years.
** Data cover only one year.
*** Data cover only five years.
**** Data cover only two years.

Table 12

SUMMARY OF REGISTERED NURSE
LICENSURE EXAMINATION RESULTS FOR DIPLOMA PROGRAMS
1973-1978

| Diploma Programs | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| Baptist Mem. Hosp. (San Antonio) | 242 | 216 | 89% |
| Brackenridge Hosp. (Austin) | 256 | 236 | 92 |
| Mary Meek School (Abilene) | 141 | 128 | 91 |
| Methodist Hosp. (Lubbock) | 394 | 345 | 88 |
| Northwest Hosp., (Amarillo) | 362 | 333 | 92 |
| Texas Eastern School (Tyler) | 227 | 186 | 82 |
| TOTAL | 1,622 | 1,444 | 89% |

Table 13

SUMMARY OF REGISTERED NURSE LICENSURE
EXAMINATION RESULTS FOR ALL PROGRAMS
1973-1978

| | | | |
|---|---|---|---|
| Public BSN | 5,717 | 4,747 | 83% |
| Independent BSN | 2,009 | 1,703 | 85 |
| University ADN | 1,178 | 868 | 74 |
| Community College ADN | 7,035 | 5,196 | 74 |
| Diploma | 1,622 | 1,444 | 89 |
| TOTAL | 17,561 | 13,958 | 79% |

## OPTOMETRY

The Texas Optometry Board is the descendant of the State Board of Optometry Examiners created in 1921. It has responsibility for examining and licensing optometrists in this state and for regulating the practice of optometry.

The two-part licensing examination is prepared by the Texas board. Educators from approved colleges of optometry assist in preparation of the written or theory portion of the exam. Because the clinical part requires the use of the optometry laboratory facilities, the examination is held at the college of optometry at the University of Houston. Fee for the licensing examination is $35.

There are twelve colleges of optometry in the United States and one in Canada. In addition to the one at the University of Houston, other schools are in Illinois, Indiana, Massachusetts, Ohio, Oregon, Pennsylvania, Tennessee, New York and Alabama. California has two optometry colleges.

Applicants for licensure must be at least 21, a high school graduate, and have a record of pre-optometry and optometry course work. To qualify for the examination the applicant must be a graduate of a college of optometry.

The Texas Optometry Board examines graduates from out-of-state colleges of optometry as well as those from Texas. The number of candidates from out-of-state is usually about half the number examined from the University of Houston.

During the period from 1973 through 1978, 461 candidates took the licensing examination for optometry, with 80 percent of them passing. University of Houston graduates had a passing rate of 91 percent, while graduates from out-of-state schools of optometry had a 58 percent passing rate.

The overall passing rate of all the candidates for the Texas licensure examination is considerably skewed by the comparatively poor performance of graduates from other states, as shown in Table 13.

Table 13

SUMMARY OF SIX YEARS' RESULTS
OF THE LICENSING EXAMINATION IN OPTOMETRY
1973-1978

| Institution | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| University of Houston | 306 | 279 | 91% |
| Out-of-state schools | 155 | 90 | 58 |
| TOTAL | 461 | 369 | 80% |

## PHARMACY

The state licensure examination in pharmacy is of two parts: theory and practical. Both must be passed for licensure.

Pharmacists in Texas have been subject to regulation and licensure by the Board of Pharmacy since 1907. The licensure candidate must be a graduate of a board-approved school of pharmacy and have at least 1,000 hours practical experience in a retail pharmacy under supervision of a registered pharmacist. The board also is authorized to regulate the drug manufacturing industry through its issuance of operating permits. Retail pharmacies are regulated by the board as well.

To qualify for the practical examination, a candidate first must pass the theoretical exam. As Table 14 illustrates, the total number of candidates for the theory examination from 1973 through 1978 was 1,955, with 89 percent passing. For UT Austin during this period, there were 1,089 candidates,and 1,011 of them passed for a rate of 93 percent. There were 84 candidates retaking the theory test, and 67 of them passed for a rate of 80 percent. Passing rate for those candidates taking the theory exam for the first time from UT Austin was 94 percent.

University of Houston candidates totaled 597 for the same period, and 576 of them passed for a rate of 96 percent. Eighteen were retakes, and 78 percent of them passed. The number taking the examination for the first time was 579 with 562 passing for a rate of 97 percent.

Texas Southern University had 269 candidates with 146 of them passing for a rate of 54 percent. There were 85 candidates from that institution retaking the exam, and 39 of them passed for a rate of 46 percent.

On the practical and oral portion of the licensure examination 98 percent of the 1,715 candidates from the three state pharmacy schools were licensed. Of the 983 candidates from UT Austin 98 percent were licensed; the University of Houston had only one of its 579 candidates fail for 99.8 percent passing rate; and of the 153 Texas Southern University candidates, 91 percent passed. Those figures include those retaking the examination.

Table 14

SUMMARY OF THE RESULTS OF SIX YEARS
OF THE LICENSURE EXAMINATION IN PHARMACY
1973-1978

THEORY EXAM

| Institution | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| Texas Southern U. | 269 | 146 | 54% |
| U. of Houston | 597 | 576 | 96 |
| U. of Texas at Austin | 1,089 | 1,011 | 93 |
| TOTAL | 1,955 | 1,733 | 89% |

PRACTICAL AND ORAL EXAM *

| | | | |
|---|---|---|---|
| Texas Southern U. | 153 | 139 | 91% |
| U. of Houston | 579 | 578 | 99 |
| U. of Texas at Austin | 983 | 968 | 98 |
| TOTAL | 1,715 | 1,685 | 98% |

* Candidates are required to pass the theory examination and serve a 400-hour internship to qualify for the practical and oral examination. Figures for the two parts of the examination will include candidates who had previously taken and passed the theory part but have not yet attempted the practical portion.

## PHYSICAL THERAPY

The Texas Board of Physical Therapy Examiners, established by the Legislature in 1971, is responsible for examining and licensing physical therapists and physical therapist assistants who plan to practice in Texas.

Professional physical therapy programs are offered at Texas Woman's University and the University of Texas Health Science Center at Dallas and the Medical Branch at Galveston. A fourth active professional program is at Brooke Army Medical Center but enrollment is not open to civilians, and no data was reported on the performance of its graduates.

Records on professional licensure examinations in physical therapy have been kept since 1972, the first year examinations were administered in Texas. Data provided by the licensure board show that 406 graduates of the three programs at the public institutions took the examination, with 90 percent of those first-time examinees passing. The performance of the graduates of each of the three programs is shown in Table 15.

There are approved physical therapy assistant programs in the state at St. Philip's College, Tarrant County Junior College and Houston Community College, but test performance data was available on only two. The passing rate was approximately 92 percent for the St. Philip's program for the five years through 1977 and 58 percent for the Houston Community College program.

Tarrant County Junior College graduated its first class of physical therapy assistants in 1978. The summary in Table 16 is for exams from August 1973 through October 1977 for St. Philips, and for three exams in May and October 1976 and April 1977 for Houston Community College.

Table 15

SUMMARY OF RESULTS OF SIX YEARS OF
LICENSURE EXAMINATIONS IN PHYSICAL THERAPY
1972-1977

| Institution | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| Texas Woman's U. | 116 | 99 | 85% |
| UTHSC Dallas | 115 | 106 | 92 |
| UTMB Galveston | 175 | 159 | 91 |
| TOTAL | 406 | 364 | 90% |

Table 16

PASSING RATES IN PHYSICAL THERAPY
ASSISTANT LICENSURE EXAMINATIONS FOR TWO
PROGRAMS
1973-1977

| | | | |
|---|---|---|---|
| St. Philips College | 50 | 46 | 92% |
| Houston Comm. Coll | 38 | 22 | 58 |
| TOTAL | 88 | 68 | 77% |

## PSYCHOLOGY

The Texas State Board of Examiners of Psychologists was established in 1969 to examine, license and regulate those individuals in the profession. The board is authorized to administer examinations for psychologist candidates and to issue specialty certifications for clinical psychologists, counseling psychologists, industrial psychologists and school psychologists.

Two types of certification are granted by the board. If candidates have a doctoral degree in the area of psychology and meets certain other requirements, they can be certified as a psychologists. Candidates with a master's degree in the area of psychology who meet certain other criteria can be certified as a psychological associate.

Certification attests to the candidate's educational qualifications but does not authorize him to practice. Licensure is granted certified persons who meet all the requirements of the statute. The fee for the certification application is $65, and the examination costs $60. Application for licensure costs $50, bringing the cost of acquiring the license to $175. There is also a $20 fee for the original application for health service provider, for a grand total of $195. Annual renewal fees total $75.

The psychological associate cannot practice independently. There are two categories where he or she can be employed: under the direct supervision of a licensed psychologist and in an exempt agency. Some exempt agencies now are requiring their employees to acquire certification. The psychological associate is not eligible for licensure.

From 1973 through one exam in 1978, there were 835 candidates for doctoral-level certification. Of that number, 411 were graduates of nine public institutions, 54 were graduates of three independent institutions and 370 were from

out-of-state. Those from the public institutions had a passing rate of 83 percent, and those from the independent institutions had a passing rate of 74 percent. The overall passing rate was 82 percent, as shown in Table 17.

At the psychological associate level a greater number of colleges and universities are represented in the examinations because the master's degree in psychology is more widely available than the doctorate. As Table 18 illustrates, graduates of 21 public and eight independent institutions took the psychological associate examination. North Texas State University had more graduates take the exam than any other institution from 1973 to 1978 (no data were available for 1974).

Of 526 candidates for the psychological associate examination from public institutions, 77 percent passed. The independent institutions sent 154 candidates and 84 percent passed.

Some 79 percent of the 141 out-of-state graduates who were candidates passed. Overall passing rate for the 821 candidates from all sources also was 79 percent.

The data shown in Table 18 on state examinations for psychologists certification provide a profile of scores of Texas candidates. While it may be desirable to show the same type of pass/fail information at the national level, such information would not produce a valid comparison because each state can and does establish its own cut-off point or minimum passing grade, and those standards vary from state to state.

That leaves one other basis of comparison: the average percent scores for all examinees. In all certification examinations since 1973, the standardized test had a maximum raw score of 150. The candidates' raw scores are aggregated and averaged and converted into the percent of the maximum raw score.

In Table 19, the average percent scores are shown for each certification examination from March 3, 1973, through April 14, 1978. Fourteen examinations were administered during that time to 923 Texas candidates and 19,807 nationally. The scores for Texas certification were higher than the national average on 11 of the 14 examinations.

Table 17

SUMMARY OF THE RESULTS OF SIX YEARS
OF THE CERTIFICATION EXAMINATION FOR PSYCHOLOGISTS
(DOCTORAL)
1973-1978

| Public Universities | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| East Texas State U. | 44 | 34 | 77% |
| North Texas State U. | 61 | 44 | 72 |
| Texas A&M U. | 31 | 25 | 81 |
| Texas Tech U. | 43 | 38 | 88 |
| Texas Woman's U. | 7 | 5 | 71 |
| U.of Houston | 83 | 70 | 84 |
| UT Arlington | 2 | 2 | 100 |
| UT Austin | 127 | 111 | 87 |
| UTHSC Dallas | 13 | 13 | 100 |
| Subtotal | 411 | 342 | 83% |
| Independent Universities | | | |
| Baylor U. | 38 | 24 | 63% |
| Texas Christian U. | 15 | 15 | 100 |
| Rice U. | 1 | 1 | 100 |
| Subtotal | 54 | 40 | 74% |
| Candidates from out-of-state schools | 370 | 304 | 82% |
| TOTAL | 835 | 686 | 82% |

Table 18

SUMMARY OF FIVE YEARS RESULTS OF THE CERTIFICATION EXAMINATION OF THE PSYCHOLOGICAL ASSOCIATE (MASTER'S) 1973-1978*

| Public Universities | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| East Texas State U. | 44 | 28 | 64% |
| Lamar U. | 3 | 3 | 100 |
| Midwestern State U. | 2 | 1 | 50 |
| North Texas State U. | 95 | 76 | 80 |
| Southwest Texas State U. | 53 | 41 | 77 |
| Stephen F. Austin U. | 29 | 24 | 83 |
| Texas A&I U. | 46 | 28 | 61 |
| Corpus Christi State U. | 7 | 7 | 100 |
| Texas A&M U. | 27 | 24 | 89 |
| Texas Eastern U. | 3 | 3 | 100 |
| Texas Southern U. | 9 | 4 | 44 |
| Texas Tech U. | 28 | 23 | 82 |
| Texas Woman's U. | 28 | 16 | 57 |
| UTHSC Dallas | 2 | 1 | 50 |
| UT Arlington | 3 | 3 | 100 |
| UT Austin | 43 | 39 | 91 |
| UT El Paso | 16 | 9 | 56 |
| UT Sar. Antonio | 1 | - | - |
| UH Central Campus | 63 | 59 | 94 |
| UH Clear Lake | 13 | 8 | 62 |
| West Texas State U. | 11 | 6 | 55 |
| Subtotal | 526 | 403 | 77% |
| Independent Universities | | | |
| Abilene Christian U. | 22 | 20 | 90% |
| American Technological U. | 1 | - | - |
| Baylor U. | 6 | 6 | 100 |
| Our Lady of the Lake U. | 13 | 7 | 54 |
| St. Mary's U. | 18 | 16 | 89 |
| Southern Methodist U. | 15 | 13 | 87 |
| Texas Christian U. | 17 | 16 | 94 |
| Trinity U. | 62 | 52 | 84 |
| Subtotal | 154 | 130 | 84% |
| Candidates from out-of-state schools | 141 | 112 | 79 |
| TOTAL | 821 | 645 | 79% |

* Data for the certification year 1974 is not available.

Table 19

COMPARISON OF STATE AND NATIONAL CERTIFICATION EXAMINATION SCORES FOR PSYCHOLOGISTS 1973-1978*

| Exam Date | Texas Examinees | Mean % Score | National Examinees | Mean % Score |
|---|---|---|---|---|
| 1973 | 51 | 69% | 913 | 69% |
| 1973 | 33 | 68 | 1,316 | 69 |
| 1973 | 38 | 70 | 1,413 | 69 |
| 1974 | 35 | 64 | 1,571 | 63 |
| 1974 | 1 | 42 | 2,114 | 70 |
| 1974 | 67 | 74 | 162 | 72 |
| 1975 | 66 | 73 | 594 | 70 |
| 1975 | 42 | 74 | 1,337 | 70 |
| 1975 | 87 | 74 | 1,496 | 70 |
| 1976 | 74 | 74 | 2,282 | 71 |
| 1976 | 109 | 75 | 3,481 | 71 |
| 1977 | 119 | 70 | 322 | 69 |
| 1977 | 98 | 72 | 1,450 | 71 |
| 1978 | 103 | 75 | 1,356 | 71 |
| TOTAL | 923 | | 19,807 | |

* Mean percent scores are based upon raw scores of 150. These data do not indicate pass/fail percentages, as that varies with each examination.

## VETERINARY MEDICINE

The only operating school of veterinary medicine in Texas at the present time is the college of veterinary medicine at Texas A&M University. A second school at Texas Tech University has been approved by the Coordinating Board but has not been funded by the Legislature. The program at Texas A&M is among the largest in the country and has produced over 100 graduates each year for the past several years.

Licensure examination performance by Texas A&M graduates is exceedingly high, with less than one percent failing to pass the exam between 1973-1978. Between 126 and 139 applicants from A&M have taken the exam each year and the success rate on the exam is consistently high.

In 1973 all 126 A&M applicants passed, in 1975 all 128 passed and in 1976 all 129 passed -- for a 100 percent passing rate in three of the four years. Between 1973 and through the first exam in 1978, A&M had 776 who passed and only 8 who failed on their first attempt at the test. The success rate was 99 percent.

During each of those years, there were applicants from 25 to 30 other states and countries. They, too, were generally very successful on the exam, and in 1976, all 47 applicants from out of state passed. For the period 1973 through early 1978, 94 percent of the 253 applicants passed.

The licensure examination for veterinarians in Texas is offered each year in June and December. The June examination is held at the college of veterinary medicine at Texas A&M University, and the December exam is held at any other location selected by the state board. The examination consists of three parts. One of the three is the National Veterinarian Examination which is given in about 31 states, and the other two parts, a day-long written and a practical exam, are prepared by the Texas board.

The three-day examination costs the candidate $100. Each year the Texas board administers the licensure examination to 125 or more Texas A&M graduates and from 40 to 50 candidates from veterinary medical programs in other states or countries.

Because the national portion of the licensure examination makes up only about one-third of examination requirements, comparisons at the national level or on a state-to-state basis are meaningless. However, a comparison was made of the pass/fail rates of graduates from out of state with the candidates from Texas A&M. Through the cooperation of the staff of the Texas Board of Veterinary Medical Examiners, data was acquired on the pass/fail rates of those out-of-state graduates and those comparisons of a selected number of the out-of-state programs, are shown in Table 20. The examination was administered to both A&M candidates and out-of-state candidates at the same time.

Graduates of the eight selected out-of-state veterinary medical schools performed quite well on the examination with a 96 percent success rate. These success rates illustrate that the competition for admission to the veterinary medical school permits high selectivity by the program at Texas A&M and, from the performance ratios generated by the candidates from out-of-state, their schools are in the equally fortuitous position of being able to select students from a large pool of qualified applicants.

Table 20

SUMMARY OF THE RESULTS OF SIX YEARS
OF THE LICENSURE EXAMINATION FOR VETERINARIANS
1973-1978

| Institution | Number of Candidates | Number Passing | Percent Passing |
|---|---|---|---|
| Texas A&M U. | 784 | 776 | 99% |
| Candidates from out-of-state schools * | | | |
| Auburn University | 31 | 30 | 97% |
| Colorado State | 29 | 29 | 100 |
| Kansas State | 24 | 22 | 92 |
| University of Missouri | 16 | 16 | 100 |
| Ohio State | 15 | 14 | 93 |
| Oklahoma State | 38 | 36 | 95 |
| Iowa State | 12 | 11 | 92 |
| Purdue University | 15 | 15 | 100 |
| Subtotal | 180 | 173 | 96% |
| TOTAL | 964 | 949 | 98% |

* This list includes only those out-of-state institutions having 12 or more candidates over the six-year period. There were 251 candidates from other states and four foreign countries during this period who took the Texas licensure examination. There were 16 failures.